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# NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
# FACT SHEET

(pursuant to NAC 445A.236)

**Permittee Name**: The City of West Wendover
P.O. Box 2825
West Wendover, NV 89883

**Permit Number**: NEV10019

**Location**: West Wendover Wastewater Treatment Plant (1.0 mile southeast of city)
Latitude: 40° 43' 33"N, Longitude: 114° 03' 43"W
(WWWTP Office/Lab)
Township 33N, Range 70E, Section 21

**General**: West Wendover Wastewater Treatment Plant (WWWTP) operates a 1.0 million gallon per day (MGD) (30-day average) wastewater treatment plant, which services a customer base of 5,000 residents, several casinos, and light-commercial businesses (e.g., restaurants, motels, convenience stores), located in West Wendover, Nevada. During warmer months, a portion of the domestic wastewater influent from neighboring Wendover, Utah (approximately 1,500 residents) is discharged via lift station to the West Wendover, Nevada treatment plant. The volume of wastewater influent received from Utah residences in the summer months is approximately 0.2 to 0.4 MGD. After screening and grit removal in the headworks section, wastewater undergoes biological treatment (e.g., activated sludge process) in two Marwood-brand aeration basins, rated at 0.5 MGD per basin. Activated sludge is periodically wasted to the aerobic sludge digester tank, prior to final dewatering in two sludge drying beds. The City of West Wendover incorporates the dewatered sludge biosolids in a municipal composting operation. During cooler weather periods (e.g., October through mid-March), clarified effluent from the aeration basins was stored in four lined storage lagoons, each holding 70 acre-feet (≅ 22.8 MG per lagoon). In the recent past the WWWTP removed the dike between Pond #3 and Pond #4, to create one large pond, effectively removing the former lining for these ponds. In warmer months, effluent is reused at the Toana Vista Municipal Golf Course, operated by the West Wendover Recreation District. Secondary treated, disinfected effluent is used for golf course irrigation. During reuse periods, the clarified effluent is further treated by sand filtration (suspended solids removal) and chlorination (disinfection). In the arid climate of West Wendover, irrigation requirements at the golf course can exceed 1.0 MGD, thereby requiring the additional pumping of wastewater from Wendover, Utah to conserve the public water supply.

**Receiving Water Characteristics**: The receiving water body for treated effluent is groundwater of the State of Nevada. Groundwater depth and quality has not been determined as of this time. It is presumed that this groundwater is shallow and of poor quality due to high Total Dissolved Solids (TDS). West Wendover is located on alkali/mud flats (e.g., moderate to high soil salt content), which were created from evaporation of Ancient Lake Bonneville (e.g., now Bonneville Salt Flats).

Municipal water for West Wendover is pumped from approximately 25 miles away from several municipal wells and a developed spring.

**Flow**: The permit limits 30-day average and maximum flow to 1.0 MGD. Presently, the 30-day average flow is 0.56 MGD, which will fluctuate according to weekend casino traffic and receipt of influent from Wendover, Utah. Although this limit has not been exceeded (January 2005 to March 2006) the 85% flow has been reached (30-day average) during four monthly periods (11/05, 12/05, 1/06 and 2/06). The Permittee is planning a plant expansion, which must be approved by the Division prior to start of any construction.

**Proposed Effluent Limitations and Special Conditions:**

**Table 1: Plant Discharge Limitations[1]**

| PARAMETER | DISCHARGE LIMITATIONS | | MONITORING REQUIREMENTS | |
|---|---|---|---|---|
| | 30 - Day Average | Daily Maximum | Measurement Frequency | Sample Type |
| Flow, MGD (Influent) | 1.0 | 1.0 | Continuous | Flow Meter |
| Flow, MGD (Effluent to Reuse Site)‡ | Monitor & Report | | Continuous | Flow Meter |
| $BOD_5$, mg/L (Influent) | Monitor & Report | | Twice/Month | Composite |
| $BOD_5$, mg/L (Effluent) | 30 | 45 | Twice/Month | Composite |
| TSS, mg/L (Influent) | Monitor & Report | | Twice/Month | Composite |
| TSS, mg/L (Effluent) | 30 | 45 | Twice/Month | Composite |
| pH, Std. Units (Plant Effluent) | Between 6.0 to 9.0 | | Twice/Month | Discrete |
| Total Nitrogen as N, mg/L (Effluent) | Monitor & Report | | Quarterly | Composite |
| Fecal Coliform, c.f.u. or mpn/100 ml (Effluent)[2] | 2.2 | 23 | Weekly during Irrigation Season | Discrete |

[1]: Effluent samples shall be collected prior to discharge to the three storage lagoons at the wastewater treatment plant.

[2]: Fecal coliform testing shall be performed weekly during effluent re-use period and twice per month during non re-use periods. The fecal coliform count is to meet Category "B" treated effluent requirements specified in NAC 445A.276.

**Schedule of Compliance:** The Permittee shall implement and comply with the provisions of the schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications, which the Administrator may make in approving the schedule of compliance.

The Permittee shall submit to the Division plans for review and approval, wet stamped and signed by a Professional Engineer registered in the State of Nevada, for any construction or expansion of the WTP, **prior** to commencing construction or expansion.

The Permittee shall submit for Division review and approval, within one hundred twenty (120) calendar days of the issuance date of the permit **(November 16, 2006)**, the following items:

- Any additions made to the West Wendover Operations and Maintenance (O&M) Manual, since the last submittal to the Division;

- "As built" drawings, wet stamped and signed by a Professional Engineer registered in the State of Nevada, of any physical or operational changes to the WTP, including the changes to disposal pond #3 and #4, that were not previously approved by the Division; and

- **Groundwater monitoring wells:** Because the lining of Pond #3 and Pond #4 have been breached and because of the high nitrogen content of the effluent (14.0 mg/L 30-day average), the Permittee shall submit for approval a plan for the installation of groundwater monitoring wells (one up-gradient (Monitoring Well #1 (MW-1)) and two down-gradient (Monitoring Wells #2 and #3 (MW-2, MW-3)) of the storage ponds). The plan shall be prepared in accordance with *WTS-4: Guidance Document For Design of Groundwater Monitoring Wells (revised 1996).* The plan shall include a schedule indicating when the monitoring wells will be installed. The monitoring of these wells shall be included in the revised O&M Manual as required above.

**Groundwater Monitoring:**

After the groundwater monitoring wells have been installed they shall be measured and sampled as specified in Table 2 below:

**Table 2**

| Parameter | Groundwater Limitation | Sample Locations | Monitoring Requirements | |
|---|---|---|---|---|
| | | | Measurement Frequency | Sample Type |
| Depth to Groundwater (feet; bgl) | Monitor & Report | Each Well | Quartely | Discrete Measurement |

| | | | | |
|---|---|---|---|---|
| Groundwater Elevation (amsl) | Monitor & Report | Each Well | Quartely | Calculate |
| Groundwater Gradient and Flow Direction (ft/ft, compass direction) | Report | | Annually | Calculate & Illustrate |
| Total Nitrogen as N (mg/L) | 10.0 | Each Well | Quartely | Discrete |
| Nitrate as N (mg/L) | 10.0[1] | Each Well | Quartely | Discrete |
| Total Dissolved Solids (mg/L) | Monitor & Report | Each Well | Quartely | Discrete |
| Chloride (mg/L) | Monitor & Report | Each Well | Quartely | Discrete |

bgl: below ground level amsl: above mean sea level ft/ft: foot per foot (vertical to horizontal) mg/L: milligrams per liter as N: as Nitrogen

1: If the nitrate as N concentrations measured in the groundwater increase as a result of effluent storage and disposal to:

i. 7.0 mg/L, the Permittee shall revise the O&M Manual to provide management practices which woill reduce the nitrogen content of the effluent.

ii. 9.0 mg/L, the Permittee shall execute all corrective action necessary to ensure no further degradation of groundwater.

iii. 10.0 mg/L, the Permittee shall discontinue the discharge of wastewater effluent to groundwater, unless otherwise authorized by the Division.

It shall be the responsibility of the Permittee to determine the cause of the increase in nitrate measurements.

**Rationale for Permit Requirements:** The Division's rationale for the proposed monitoring conditions is as follows:

- *Total Nitrogen-N Monitoring*: This parameter shall be tracked to ensure that groundwater of the State is not degraded due to the high nitrogen content of the effluent.

- *$BOD_5$ & TSS*: The Division's $BOD_5$ and TSS requirements for secondary-treated effluent are 30/45 mg/L for the 30-day average/daily maximum values.

- *Fecal Coliform*: Category "B" effluent has no buffer zone requirements for reuse effluent (i.e., zero (0) feet) and is suitable for use on golf courses and other publicly accessible areas.

- *pH*: The Division requires the effluent to meet a pH limitation of between 6.0 to 9.0 standard units

- *Groundwater Monitoring*: **MONITORING WELLS:** Monitoring wells are needed because the effluent is not denitrified and the linings of Pond #3 and Pond #4 have been compromised by the removal of the dike between the ponds and to ensure that the effluent does not degrade the groundwater of the State.

**Procedures for Public Comment:** The Notice of the Division's intent to re-issue (renew) a permit authorizing the facility to discharge secondary treated, disinfected effluent into the groundwater via perculation from the ponds (Ponds #1, #2 & #3-4) and irrigation at the Toana Vista Golf Course, subject to the conditions contained within the permit is being sent to the **Elko Daily Free Press** newspapers for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing for a period of thirty (30) days following the date of the public notice. The comment period can be extended at the discretion of the Administrator. The deadline date at the Division for receipt of all comments pertaining to this public notice period is **August 18, 2006 at 5:00 P.M.**

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator or any interested agency, person or group of persons.

The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

**Proposed Determination:** The Division has made the tentative determination to issue (renew) the proposed groundwater discharge permit for a period of five (5) years.

Prepared by: James T. Hogan
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